



QNAP Turbo NAS

硬件使用手册

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感谢您购买威联通产品。此使用手册提供 Turbo NAS 的硬件说明及相关功能介绍，请仔细阅读并依照本手册使用产品功能。

本使用手册适用于下列 Turbo NAS 型号：HS-210、HS-251、HS-251+、TS-112P、TS-131、TS-212P、TS-231、TS-231+、TS-251、TS-251+、TS-251C、TS-253 Pro、TS-431、TS-431+、TS-431U、TS-451、TS-451+、TS-451S、TS-451U、TS-453 Pro、TS-453S Pro（前身为 SS-453 Pro）、TS-453U、TS-453U-RP、TS-463U、TS-463U-RP、TVS-463、TS-470U-SP/RP、TS-563、TS-531P、TS-651、TS-653 Pro、TVS-663、TS-831X、TS-851、TS-853 Pro、TS-853S Pro（前身为 SS-853 Pro）、TS-853U、TS-853U-RP、TS-863U、TS-863U-RP、TVS-863、TVS-863+、TS-870U-RP、TS-879 Pro、TS-879U-RP、TS-EC879U-RP、TS-1079 Pro、TS-1253U、TS-1253U-RP、TS-1263U、TS-1263U-RP、TS-1270U-RP、TS-1279U-RP、TS-EC1279U-RP、TS-1679U-RP、TS-EC1679U-RP、IS-453S、TS-453mini、TAS-168、TAS-268、TS-253A、TS-453A、TS-653A、TS-853A、TS-128、TS-228、TBS-453A

注意：

- 本手册中 Turbo vNAS 及 Turbo NAS 皆简称为 NAS。
- 本手册包含威联通 Turbo NAS 系列网络储存服务器的使用说明，部份功能仅适用于特定型号，您所购买的型号可能不支持这些功能。
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规范声明



FCC 声明

QNAP NAS 符合不同的 FCC 规范等级。详细信息，请参考附录。一旦确定本产品的等级，请参考以下对应的声明。

FCC A 级声明

本产品符合 FCC 规则第 15 部份。产品操作受以下两条件限制：

1. 本产品不得造成有害干扰。
2. 本产品必须接受任何接受到的干扰，包含可能造成意外操作的干扰。

注意：本产品已通过测试并符合 FCC 规则第 15 部分 A 级数位装置之限制。此等限制旨在此装置于商业环境中操作时，提供免于有害干扰之合理保护所设计。本产品产生、使用、并可能放射调频能量，若未依据指示安装及使用，可能对无线电通讯造成有害干扰。在住宅区操作本产品可能会造成有害干扰。在这种情况下，使用者必须自行解决干扰现象。

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A 급기기

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1. 本产品不得造成有害干扰。
2. 本产品必须接受任何接受到的干扰，包含可能造成意外操作的干扰。

注意：本产品已通过测试并符合 FCC 规则第 15 部分 B 级数位装置之限制。此等限制旨在为家用装置提供免于有害干扰之合理保护所设计。本产品产生、使用、并可能放射调频能量，若未依据指示安装及使用，可能对无线电通讯造成有害干扰。但特定之安装并不保证免于发生干扰。若本产品对收音机、电视之收讯造成有害干扰(可开关设备之电源确认)，建议使用者以下列一种或多种方式改善干扰状况：

- 重新调整或放置接收天线。
- 增加本产品与接收器之间的距离。
- 将本产品连接到与接收器不同的电源插座上。
- 如需协助，请洽询经销商或专业的收音机或电视技术人员。

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QNAP NAS 符合不同的 CE 规范等级。详细信息，请参考附录。



SJ/T 11364-2006

QNAP Turbo NAS 符合 SJ/T 11364-2006 （电子信息产品污染控制标识要求）执行标准。

本产品符合中国 RoHS 标准。以下表格标示此产品中某有毒物质的含量符合中国 RoHS 标准规定的限量要求。



本产品上会附有 [环境友好使用期限] 的标签，此期限是估算这些物质 [不会有泄漏或突变] 的年限。本产品可能包含有较短的环境友好使用期限的可替换元件，像是电池或灯管，这些元件将会单独标示出来。

部件名称	有毒有害物质或元素					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (CR(VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
壳体	0	0	0	0	0	0
显示	0	0	0	0	0	0
印刷电路板	0	0	0	0	0	0
金属螺帽	0	0	0	0	0	0
电缆组装	0	0	0	0	0	0
风扇组装	0	0	0	0	0	0
电力供应组装	0	0	0	0	0	0
电池	0	0	0	0	0	0

0: 表示该有毒有害物质在该部件所有物质材料中的含量均在 SJ/T11363-2006 标准规定的限量要求以下。

X: 表示该有毒有害物质至少在该部件的某一均质材料中的含量超出 SJ/T11363-2006 标准规定的限量要求。

本文使用的符号说明

 警告	此符号表示使用者必须严格依照说明操作，否则将会导致身体伤害甚至死亡。
 注意	此符号表示该行为可能会引致硬盘数据被清除，或不依照说明操作之情况下，可能会导致数据、硬盘或产品损毁。

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安全须知

1. 本产品的使用环境温度应介于 0° C - 40° C，相对湿度为 0% - 95%。请确保其放置场所通风良好。
2. 与本产品连接的线路和装置必须能提供本产品正常的电量(100W, 90 - 264V)，以确保其运作正常。
3. 切勿将本产品放置于直接受阳光曝晒或靠近化学药剂的场所。请确保其所在环境维持稳定的温度与湿度。
4. 清洁时本产品，先将电源插头及所有线路拔下，再以干布擦拭即可。切勿使用任何化学药剂或喷雾式清洁剂清洁本产品。
5. 为确保机器正常运作，以及避免机器过热，切勿将任何物品或重物放置于本产品上。
6. 安装硬盘时，请务必使用平头螺丝将硬盘固定在硬盘抽取盒上，以确保其运作正常。
7. 切勿使本产品靠近水源。
8. 切勿将本产品放置在不平稳的桌子或台面上，以避免因本产品滑落而损坏。
9. 使用本产品时，请留意当地的电压指示。若无法确定，请洽询经销商或当地电力公司。
10. 切勿放置任何物品于本产品的电源在线。
11. 切勿自行维修本产品。不当的拆装，可能导致触电或其它不良后果。若有任何维修问题，请洽询当地经销商。
12. 机架式系统只适用于机房，并应由授权之系统管理员管理及维护。机房必须上锁，并只允许授权人员进入。



警告：

- 如错误更换电池，可能会有导致爆炸的危险。更换电池时，请务必更换同类型之电池，或更换制造商建议的类型。请依照当地废弃物管理办法规定，处理使用过之电池组。
- 切勿触摸系统内之风扇，以避免严重性伤害。



第1章 CPU 处理器及内存规格



注意：变更威联通产品的硬件、软件或固件，将导致产品保固完全失效。威联通不负责任何因改机导致的任何形式的产品毁损或数据流失。使用者需自行负责因变更 Turbo NAS 硬件、更改系统固件或安装未授权的第三者应用程序而导致任何可能的数据损失或系统不稳定等问题。

系统型号	TS-112P	TS-212P
CPU 处理器	Marvell 1.6GHz	Marvell 1.6GHz
内存	512MB DDR2	512MB DDR2
Flash 快闪记忆	16MB	16MB
可否更换内存	-	-
RAM 插槽数目	-	-
硬盘插槽数目	1	2

系统型号	TS-128	TS-228
CPU 处理器	Dual-core ARM®v7 1.1GHz	Dual-core ARM®v7 1.1GHz
内存	1GB DDR3	1GB DDR3
Flash 快闪记忆	4GB	4GB
可否更换内存	-	-
RAM 插槽数目	-	-
硬盘插槽数目	1（仅限 3.5”）	2（仅限 3.5”）

系统型号	TAS-168	TAS-268
CPU 处理器	Dual-core Realtek 1.1GHz	Dual-core Realtek 1.1GHz
内存	2GB DDR3	2GB DDR3
Flash 快闪记忆	4GB	4GB
可否更换内存	-	-
RAM 插槽数目	-	-
硬盘插槽数目	1 (仅限 3.5")	2 (仅限 3.5")
IR 传感器	✓ (QNAP 遥控器: RM-IR003)	✓ (QNAP 遥控器: RM-IR003)

系统型号	TS-131	TS-231
CPU 处理器	Dual-core Freescale™ 1.2GHz	Dual-core Freescale™ 1.2GHz
内存	512MB DDR3	512MB DDR3
Flash 快闪记忆	512MB	512MB
可否更换内存	-	-
RAM 插槽数目	-	-
硬盘插槽数目	1	2

系统型号	TS-431	TS-431U
CPU 处理器	Dual-core Freescale™ 1.2GHz	Dual-core Freescale™ 1.2GHz
内存	512MB DDR3	1GB DDR3
Flash 快闪记忆	512MB	512MB
可否更换内存	-	-
RAM 插槽数目	-	-
硬盘插槽数目	4	4

系统型号	TS-231+	TS-431+
CPU 处理器	Annapurna Labs Alpine AL-212 Dual-core 1.4 GHz Cortex-A15	Annapurna Labs Alpine AL-212 Dual-core 1.4 GHz Cortex-A15
内存	1GB DDR3	1GB DDR3
Flash 快闪记忆	512MB	512MB
可否更换内存	-	-
RAM 插槽数目	-	-
硬盘插槽数目	2	4
PCI-E 扩充插槽	-	-
内置 10GbE LAN 端口	-	-

系统型号	TS-531P	TS-831X
CPU 处理器	Quad-core Annapurna Labs Alpine AL-314 1.4 GHz Cortex-A15	Annapurna Labs Alpine AL-314 Quad-core 1.4 GHz Cortex-A15
内存	2GB/8GB DDR3 (可扩充至 16GB)	8GB/16GB DDR3 (可扩充至 16GB)
Flash 快闪记忆	512MB	512MB
可否更换内存	✓ (与 DDR3 RAM 兼容之内存)	✓ (与 DDR3L RAM 兼容之内存)
RAM 插槽数目	2 (SODIMM)	2 (SODIMM)
硬盘插槽数目	5	8
PCI-E 扩充插槽	1	1
内置 10GbE LAN 端口	-	2 x SFP+

系统型号	HS-210
CPU 处理器	Marvell 1.6GHz
内存	512MB DDR3
Flash 快闪记忆	16MB
可否更换内存	-
RAM 插槽数目	-
硬盘插槽数目	2

系统型号	TS-451U	TS-453U	TS-453U-RP
CPU 处理器	Dual-core Intel® Celeron™ 2.41GHz (可扩充至 2.58GHz)	Quad-core Intel® Celeron™ 2.0GHz (可扩充至 2.42GHz)	Quad-core Intel® Celeron™ 2.0GHz (可扩充至 2.42GHz)
内存	1GB DDR3L (可扩充至 8GB)	4GB/8GB DDR3L (可扩充至 8GB)	4GB/8GB DDR3L (可扩充至 8GB)
Flash 快闪记忆	512MB (USB DOM)	512MB (USB DOM)	512MB (USB DOM)
可否更换内存	✓ (与 DDR3L RAM 兼容之内存)	✓ (与 DDR3L RAM 兼容之内存)	✓ (与 DDR3L RAM 兼容之内存)
RAM 插槽数目	2 (SODIMM)	2 (SODIMM)	2 (SODIMM)
硬盘插槽数目	4	4	4
电源供应器	250W	250W	2 x 250W

系统型号	TS-853U	TS-853U-RP
CPU 处理器	Quad-core Intel® Celeron™ 2.0GHz (可扩充至 2.42GHz)	Quad-core Intel® Celeron™ 2.0GHz (可扩充至 2.42GHz)
内存	4GB/8GB DDR3L (可扩充至 8GB)	4GB/8GB DDR3L (可扩充至 8GB)
Flash 快闪记忆	512MB (USB DOM)	512MB (USB DOM)
可否更换内存	✓ (与 DDR3L RAM 兼容之内存)	✓ (与 DDR3L RAM 兼容之内存)
RAM 插槽数目	2 (SODIMM)	2 (SODIMM)
硬盘插槽数目	8	8
电源供应器	250W	2 x 250W

系统型号	TS-1253U	TS-1253U-RP
CPU 处理器	Quad-core Intel® Celeron™ 2.0GHz (可 扩充至 2.42GHz)	Quad-core Intel® Celeron™ 2.0GHz (可 扩充至 2.42GHz)
内存	4GB/8GB DDR3L (可扩 充至 8GB)	4GB/8GB DDR3L (可扩 充至 8GB)
Flash 快闪记忆	512MB (USB DOM)	512MB (USB DOM)
可否更换内存	✓ (与 DDR3L RAM 兼容 之内存)	✓ (与 DDR3L RAM 兼容 之内存)
RAM 插槽数目	2 (SODIMM)	2 (SODIMM)
硬盘插槽数目	12	12
电源供应器	250W	2 x 250W

系统型号	IS-453S
CPU 处理器	Quad-core Intel® Atom™ 1.91GHz
内存	IS-453S-2G: 2GB DDR3L IS-453S-8G: 8GB DDR3L
Flash 快闪记忆	512MB (USB DOM)
可否更换 CPU 处理器	-
可否更换内存	✓ (与 DDR3L-1333/1600 SODIMM RAM 兼容之内 存)
RAM 插槽数目	2 (SODIMM)
硬盘插槽数目	4 (仅限 2.5")

系统型号	TS-251C	TS-251 / TS-251-4G
CPU 处理器	Dual-core Intel® Celeron™ 2.41GHz (可 扩充至 2.58GHz)	Dual-core Intel® Celeron™ 2.41GHz (可 扩充至 2.58GHz)
内存	1GB DDR3L	1GB / 4GB DDR3L (可 扩充至 8GB)
Flash 快闪记忆	512MB	512MB
可否更换内存	–	✓ (与 DDR3L RAM 兼容 之内存)
RAM 插槽数目	–	2 (SODIMM)
硬盘插槽数目	2 (仅限 3.5”)	2
IR 传感器	✓ (QNAP 遥控器: RM-IR002)	✓ (QNAP 遥控器: RM-IR002)

系统型号	TS-451 / TS-451-4G	TS-451S
CPU 处理器	Dual-core Intel® Celeron™ 2.41GHz (可 扩充至 2.58GHz)	Dual-core Intel® Celeron™ 2.41GHz (可 扩充至 2.58GHz)
内存	1GB / 4GB DDR3L (可 扩充至 8GB)	1GB DDR3L (可扩充至 8GB)
Flash 快闪记忆	512MB	512MB
可否更换内存	✓ (与 DDR3L RAM 兼容 之内存)	✓ (与 DDR3L RAM 兼容 之内存)
RAM 插槽数目	2 (SODIMM)	2 (SODIMM)
硬盘插槽数目	4	4 (仅限 2.5”)
IR 传感器	✓ (QNAP 遥控器: RM-IR002)	✓ (QNAP 遥控器: RM-IR002)

系统型号	TS-651 / TS-651-4G	TS-851 / TS-851-4G
CPU 处理器	Dual-core Intel® Celeron™ 2.41GHz (可 扩充至 2.58GHz)	Dual-core Intel® Celeron™ 2.41GHz (可 扩充至 2.58GHz)
内存	1GB / 4GB DDR3L (可 扩充至 8GB)	1GB / 4GB DDR3L (可 扩充至 8GB)
Flash 快闪记忆	512MB	512MB
可否更换内存	✓ (与 DDR3L RAM 兼容 之内存)	✓ (与 DDR3L RAM 兼容 之内存)
RAM 插槽数目	2 (SODIMM)	2 (SODIMM)
硬盘插槽数目	6	8
IR 传感器	✓ (QNAP 遥控器: RM-IR002)	✓ (QNAP 遥控器: RM-IR002)

系统型号	HS-251+	HS-251 / HS-251-2G
CPU 处理器	Quad-core Intel® Celeron™ 2.0GHz (可 扩充至 2.42GHz)	Dual-core Intel® Celeron™ 2.41GHz (可 扩充至 2.58GHz)
内存	2GB DDR3L	1GB / 2GB DDR3L
Flash 快闪记忆	512MB	512MB
可否更换 CPU 处理器	-	-
可否更换内存	-	-
RAM 插槽数目	-	-
硬盘插槽数目	2	2
IR 传感器	✓ (QNAP 遥控器: RM-IR002)	✓ (QNAP 遥控器: RM-IR002)

系统型号	TBS-453A-4G/ TBS-453A-4G-1TB/TBS -453A-4G-512GB	TBS-453A-8G/ TBS-453A-8G-1TB/TBS -453A-8G-512GB
CPU 处理器	Quad-core Intel® Celeron™ N3150 1.6GHz (可扩充至 2.08GHz)	Quad-core Intel® Celeron™ N3150 1.6GHz (可扩充至 2.08GHz)
内存	4GB DDR3L	8GB DDR3L
Flash 快闪记忆	4GB	4GB
可否更换 CPU	-	-
可否更换内存	✓ (与 DDR3L RAM 兼容 之内存)	✓ (与 DDR3L RAM 兼容 之内存)
RAM 插槽数目	2 (SODIMM)	2 (SODIMM)
硬盘插槽数目	4	4
IR 传感器	✓ (QNAP 遥控器: RM-IR002 和 RM-IR003)	✓ (QNAP 遥控器: RM-IR002 和 RM-IR003)

系统型号	TS-251+-2G / TS-251+-8G	TS-253 Pro / TS-253 Pro-8G	TS-453mini-2G / TS-453mini-8G
CPU 处理器	Quad-core Intel® Celeron™ 2.0GHz (可 扩充至 2.42GHz)	Quad-core Intel® Celeron™ 2.0GHz (可 扩充至 2.42GHz)	Quad-core Intel® Celeron™ 2.0GHz (可 扩充至 2.42GHz)
内存	2GB / 8GB DDR3L (可 扩充至 8GB)	2GB / 8GB DDR3L (可 扩充至 8GB)	2GB / 8GB DDR3L (可 扩充至 8GB)
Flash 快闪记忆	512MB	512MB	512MB
可否更换内存	✓ (与 DDR3L-1333/1600 RAM 兼容之内存)	✓ (与 DDR3L-1333/1600 RAM 兼容之内存)	✓ (与 DDR3L-1333/1600 RAM 兼容之内存)
RAM 插槽数目	2 (SODIMM)	2 (SODIMM)	2 (SODIMM)
硬盘插槽数目	2	2	4
LCD 面板	-	-	-
IR 传感器	✓ (QNAP 遥控器: RM-IR002)	✓ (QNAP 遥控器: RM-IR002)	✓ (QNAP 遥控器: RM-IR002)

系统型号	TS-451+-2G / TS-451+-8G	TS-453 Pro / TS-453 Pro-8G	TS-653 Pro / TS-653 Pro-8G
CPU 处理器	Quad-core Intel® Celeron™ 2.0GHz (可 扩充至 2.42GHz)	Quad-core Intel® Celeron™ 2.0GHz (可 扩充至 2.42GHz)	Quad-core Intel® Celeron™ 2.0GHz (可 扩充至 2.42GHz)
内存	2GB / 8GB DDR3L (可 扩充至 8GB)	2GB / 8GB DDR3L (可 扩充至 8GB)	2GB / 8GB DDR3L (可 扩充至 8GB)
Flash 快闪记忆	512MB	512MB	512MB
可否更换内存	✓ (与 DDR3L RAM 兼容 之内存)	✓ (与 DDR3L RAM 兼容 之内存)	✓ (与 DDR3L RAM 兼容 之内存)
RAM 插槽数目	2 (SODIMM)	2 (SODIMM)	2 (SODIMM)
硬盘插槽数目	4	4	6
LCD 面板	-	✓	✓
IR 传感器	✓ (QNAP 遥控器: RM-IR002)	✓ (QNAP 遥控器: RM-IR002)	✓ (QNAP 遥控器: RM-IR002)

系统型号	TS-853 Pro / TS-853 Pro-8G	TS-453S Pro (前身为 SS-453 Pro)	TS-853S Pro(前身为 SS-853 Pro)
CPU 处理器	Quad-core Intel® Celeron™ 2.0GHz (可 扩充至 2.42GHz)	Quad-core Intel® Celeron™ 2.0GHz (可 扩充至 2.42GHz)	Quad-core Intel® Celeron™ 2.0GHz (可 扩充至 2.42GHz)
内存	2GB / 8GB DDR3L (可 扩充至 8GB)	4GB DDR3L (可扩充至 8GB)	4GB DDR3L (可扩充至 8GB)
Flash 快闪记忆	512MB	512MB	512MB
可否更换内存	✓ (与 DDR3L RAM 兼容 之内存)	✓ (与 DDR3L RAM 兼容 之内存)	✓ (与 DDR3L RAM 兼容 之内存)
RAM 插槽数目	2 (SODIMM)	2 (SODIMM)	2 (SODIMM)
硬盘插槽数目	8	4 (仅限 2.5")	8 (仅限 2.5")
LCD 面板	✓	-	✓
IR 传感器	✓ (QNAP 遥控器: RM-IR002)	✓ (QNAP 遥控器: RM-IR002)	✓ (QNAP 遥控器: RM-IR002)

系统型号	TS-563-4G / TS-563-8G	TVS-463-4G / TVS-463-8G	TVS-663-4G / TVS-663-8G
CPU 处理器	Quad-core AMD 2.0GHz	Quad-core AMD 2.4GHz	Quad-core AMD 2.4GHz
内存	4/8 GB DDR3L (可扩充 至 16GB)	4/8 GB DDR3L (可扩充 至 16GB)	4/8 GB DDR3L (可扩充 至 16GB)
Flash 快闪记忆	512MB	512MB	512MB
可否更换内存	✓ (与 DDR3L-1600 RAM 兼容之内存)	✓ (与 DDR3L-1600 RAM 兼容之内存)	✓ (与 DDR3L-1600 RAM 兼容之内存)
RAM 插槽数目	2 (SODIMM)	2 (SODIMM)	2 (SODIMM)
硬盘插槽数目	5	4	6
PCI-E 扩充插槽	1	1	1
HDMI	-	✓	✓
LCD 面板	-	✓	✓
IR 传感器	-	✓ (QNAP 遥控器: RM-IR002)	✓ (QNAP 遥控器: RM-IR002)

系统型号	TVS-863-4G / TVS-863-8G	TVS-863+-8G / TVS-863+-16G
CPU 处理器	Quad-core AMD 2.4GHz	Quad-core AMD 2.4GHz
内存	4/8 GB DDR3L (可扩充 至 16GB)	8/16 GB DDR3L (可扩 充至 16GB)
Flash 快闪记忆	512MB	512MB
可否更换内存	✓ (与 DDR3L-1600 RAM 兼容之内存)	✓ (与 DDR3L-1600 RAM 兼容之内存)
RAM 插槽数目	2 (SODIMM)	2 (SODIMM)
硬盘插槽数目	8	8
PCI-E 扩充插槽	1	1 (出货时包含 1 埠 10GbE 网卡)
HDMI	✓	✓
LCD 面板	✓	✓
IR 传感器	✓ (QNAP 遥控器: RM-IR002)	✓ (QNAP 遥控器: RM-IR002)

系统型号	TS-253A-4G / TS-253A-8G	TS-453A -4G / TS-453A -8G	TS-653A -4G / TS-653A -8G
CPU 处理器	四核 Intel® Celeron® N3150 1.6GHz (可扩充至 2.08GHz)	四核 Intel® Celeron® N3150 1.6GHz (可扩充至 2.08GHz)	四核 Intel® Celeron® N3150 1.6GHz (可扩充至 2.08GHz)
内存	4/8 GB DDR3L (可扩充至 8GB)	4/8 GB DDR3L (可扩充至 8GB)	4/8 GB DDR3L (可扩充至 8GB)
Flash 快闪记忆	512MB	512MB	512MB
可否更换内存	✓ (与 DDR3L-1600 RAM 兼容之内存)	✓ (与 DDR3L-1600 RAM 兼容之内存)	✓ (与 DDR3L-1600 RAM 兼容之内存)
RAM 插槽数目	2 (SODIMM)	2 (SODIMM)	2 (SODIMM)
硬盘插槽数目	2	4	6
PCI-E 扩展插槽	-	-	-
HDMI	2	2	2
LCD 面板	-	✓	✓
IR 传感器	✓ (QNAP 遥控器: RM-IR002)	✓ (QNAP 遥控器: RM-IR002)	✓ (QNAP 遥控器: RM-IR002)

系统型号	TS-853A -4G / TS-853A -8G
CPU 处理器	Quad-core Intel® Celeron® N3150 1.6GHz (可扩充至 2.08GHz)
内存	4/8 GB DDR3L (可扩充 至 8GB)
Flash 快闪记忆	512MB
可否更换内存	✓ (与 DDR3L-1600 RAM 兼容之内存)
RAM 插槽数目	2 (SODIMM)
硬盘插槽数目	8
PCI-E 扩展插槽	-
HDMI	2
LCD 面板	✓
IR 传感器	✓ (QNAP 遥控器: RM-IR002)

系统型号	TS-463U	TS-463U-RP	TS-863U
CPU 处理器	Quad-core AMD 2.0GHz	Quad-core AMD 2.0GHz	Quad-core AMD 2.0GHz
内存	4 GB DDR3L (可扩充至 16GB)	4 GB DDR3L (可扩充至 16GB)	4 GB DDR3L (可扩充至 16GB)
Flash 快闪记忆	512MB	512MB	512MB
可否更换内存	✓ (与 DDR3L-1600 RAM 兼容之内存)	✓ (与 DDR3L-1600 RAM 兼容之内存)	✓ (与 DDR3L-1600 RAM 兼容之内存)
RAM 插槽数目	2 (SODIMM)	2 (SODIMM)	2 (SODIMM)
硬盘插槽数目	4	4	8
PCI-E 扩充插槽	1 (出货时包含 LAN-10G1SR-D 网卡)	1 (出货时包含 LAN-10G1SR-D 网卡)	1 (出货时包含 LAN-10G1SR-U 网卡)
HDMI	-	-	-
LCD 面板	-	-	-

系统型号	TS-863U-RP	TS-1263U	TS-1263U-RP
CPU 处理器	Quad-core AMD 2.0GHz	Quad-core AMD 2.0GHz	Quad-core AMD 2.0GHz
内存	4 GB DDR3L (可扩充至 16GB)	4 GB DDR3L (可扩充至 16GB)	4 GB DDR3L (可扩充至 16GB)
Flash 快闪记忆	512MB	512MB	512MB
可否更换内存	✓ (与 DDR3L-1600 RAM 兼容之内存)	✓ (与 DDR3L-1600 RAM 兼容之内存)	✓ (与 DDR3L-1600 RAM 兼容之内存)
RAM 插槽数目	2 (SODIMM)	2 (SODIMM)	2 (SODIMM)
硬盘插槽数目	8	12	12
PCI-E 扩充插槽	1 (出货时包含 LAN-10G1SR-U 网卡)	1 (出货时包含 LAN-10G1SR-U 网卡)	1 (出货时包含 LAN-10G1SR-U 网卡)
HDMI	-	-	-
LCD 面板	-	-	-

第2章 电源按钮及系统重置按钮说明

- 电源按钮：按此按钮开启或关闭系统。

系统型号	开启系统	硬件关机	强制关机
所有型号	按一下	按 1.5 秒	按 5 秒

- 重置按钮：按此按钮重设系统至默认值。

系统型号	系统基本重设（哔一声）	系统进阶重设（哔两声）
所有型号	按 3 秒	按 10 秒

系统基本重设（按重设键 3 秒）

持续按系统重置按钮 3 秒，系统会哔一声。以下设定将回复至默认值：

- 系统管理员密码：admin
- TCP/IP 设定：使用动态 IP 地址
- TCP/IP 设定：关闭 Jumbo Frame
- TCP/IP 设定：若有启用 Port Trunking(适用于支持双 LAN 型号)，系统将回复设定为 Active Backup（网络容错）模式。
- 系统通讯端口：8080
- 安全等级：接受所有联机
- LCD 面板密码：空白*
- VLAN 会被停用

*此功能只适用于配有 LCD 面板的机种，详情请参考 <http://www.qnap.com>。

系统进阶重设（按重设键 10 秒）

持续按系统重置按钮 10 秒，系统会在第 3 秒及第 10 秒发出哔声，然后照系统网页重设设定，所有数据将会保存，但系统设定如使用者账号、使用者群组、网络文件夹将全部被清除，如要存取旧数据，可以照原来路径建立文件夹便可。

第3章 USB 单键备份

系统型号	按键秒数（按单键备份按钮复制数据）
所有 NAS 型号	0.5 秒

透过前方 USB 端口执行单键备份功能

NAS 支持透过自动备份按钮直接由前方的 USB 端口将数据从外接储存装置复制数据至 NAS, 或将 NAS 的数据备份至外接储存装置。要使用此功能, 请依照以下步骤:

1. 确认已安装硬盘至 NAS。预设文件夹 Qusb 或 Usb 已建立。
2. 开启 NAS。
3. 在 [系统工具] > [USB 单键备份] 页面设定备份的模式。
4. 连接 USB 外接储存装置至 NAS 前方的 USB 埠。
5. 按 NAS 自动备份按钮一下。系统将根据在 NAS 上的设定备份数据。

注意:

- 本功能采用增量备份, 执行第一次完全备份后, 系统会针对差异的档案进行备份。
- 本功能仅限特定 NAS 使用。详情请参考 www.qnap.com。

第4章 系统灯号及蜂鸣器说明

NAS 的 LED 灯号指示系统状态；当 NAS 开启时，可以检查以下项目确定系统运作正常。注意检视灯号状态前，必须在 NAS 上正确安装好硬盘、接上电源及连接至网络。

LED	颜色	LED 状态	说明
系统状态	红/绿	绿灯/红灯每 0.5 秒 交错闪烁	<ol style="list-style-type: none"> 1. 硬盘格式化中。 2. 系统初始化中。 3. 韧体更新中。 4. RAID 组态重建中。 5. RAID 容量扩充 (Online RAID Capacity Expansion) 进行中。 6. RAID 组态迁移 (Online RAID Level Migration) 进行中。
		红灯常亮	<ol style="list-style-type: none"> 1. 硬盘异常。 2. 硬盘群组容量已满。 3. 硬盘群组容量将满。 4. 系统风扇异常。 5. 硬盘读写错误。 6. 硬盘坏轨。 7. RAID 降阶模式，即 RAID 5 或 RAID 6 组态有 2 颗硬盘损毁，系统数据仍能被读取。 8. 硬件自我检查错误。
		红灯每 0.5 秒闪烁	降阶模式 (RAID 1、RAID 5、RAID 6 降阶模式)。
		绿灯每 0.5 秒闪烁	<ol style="list-style-type: none"> 1. 系统开机中。 2. 系统未设定。 3. 硬盘未格式化。
		绿灯每 2 秒闪烁	该 NAS 是在 S3 睡眠模式 ²
		绿灯常亮	系统可使用。
		关闭	所有硬盘进入待命模式。
LAN	橙	常亮	用户透过网络存取数据中并发生读写错误。
		闪烁	LAN 存取中。
10 GbE ¹	绿	绿灯常亮	10GbE 网络扩充卡已安装。
		关闭	没有安装 10GbE 网络扩充卡。

¹ 10 GbE 网络扩充功能只适用于 TVS-463、TVS-663、TVS-863/863+、TS-879 Pro、TS-1079 Pro、TS-879U-RP、TS-1279U-RP、TS-EC879U-RP、TS-EC1279U-RP、TS-1679U-RP、TS-EC1679U-RP、TS-870U-RP、TS-1270U-RP。

LED	颜色	LED 状态	说明
HDD ² (硬盘)	红/绿	红灯闪烁	存取硬盘中，但发生读写错误。
		红灯常亮	硬盘读写错误。
		绿灯闪烁	硬盘读取中。
		绿灯常亮	硬盘可被存取。
USB ²	蓝	每 0.5 秒闪烁	<ol style="list-style-type: none"> 1. 系统侦测到有 USB 装置连接至前方的 USB 埠。 2. 连接至系统前方的 USB 装置正被移除。 3. 连接至系统前方的 USB 装置正被存取中。 4. 正在复制系统数据至外接 USB/eSATA 装置，或正由外接 USB/eSATA 装置复制数据至系统。
		常亮	系统侦测到前方 USB 端口有连接 USB 装置 (USB 装置已挂载至系统)。
		关闭	<ol style="list-style-type: none"> 1. 系统没有侦测到任何的 USB 装置。 2. 系统已完成复制数据至前方的 USB 装置，或已完成由前方 USB 装置复制数据至系统。
eSATA ²	橙	闪烁	资料存取中。
		关闭	系统没有侦测到任何 eSATA 装置。

² 本功能仅限特定 NAS 使用。详情请参考 www.qnap.com。

警示蜂鸣器：适用于所有 NAS 型号

警示蜂鸣器可于 [系统工具] > [硬件设定] 页面关闭。

哔叫声	次数	说明
短哔 (0.5 秒)	1	1. 系统开启中。 2. (透过软件) 关闭系统中。 3. 系统重设。 4. 韧体已更新。
短哔 (0.5 秒)	3	备份数据至外接硬盘时, 数据无法复制。
短哔 (0.5 秒), 长哔 (1.5 秒)	3 (每 5 分钟)	系统风扇异常。
长哔 (1.5 秒)	2	1. 硬盘群组容量快满。 2. 硬盘群组容量已满。 3. 硬盘降阶模式。 4. 硬盘开始重建。
	1	1. 硬件关闭系统。 2. 系统可使用。

第5章 升级 Turbo NAS 内存（安装 RAM 模块）



警告：

- 以下操作说明必须由授权及合格的技术人员进行。
- 请务必依照以下说明安装 RAM 模块至 NAS，否则将有可能导致身体伤害甚至死亡。
- 在您开始执行任何步骤之前，请务必关闭 NAS 电源，移除 NAS 的电源变压器、网络线及其他连接装置及连接线。
- 在安装内存模块前，请先戴上防静电的手腕带，并确保接地线接至地上。
- 当安装超过一个内存模块时，建议使用相同型号与规格的内存模块。

威联通提供不同的 RAM 模块（选择性购买）以供用户更新 NAS 内存。要在 NAS 安装一个额外的内存模块以更新内存，请依循以下步骤：



请依照以下说明安装额外的内存模块替 NAS 升级内存。

5.1 TS-453mini（4-bay 型号）

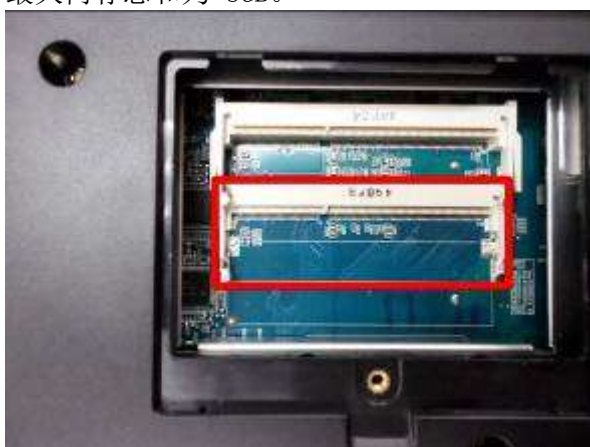
1. 使用一字起子松开 NAS 底部的内存插槽盖上的螺丝并移开内存插槽盖。



2. 如果内存插槽上已装有内存模块，请将内存模块两边之扣夹推开，此时内存会翘起，然后直接移除内存。



注意：请务必确认将内存模块安装在主要插槽（红色）中。否则，系统将会无法启动。支持的最大内存总和为 8GB。



3. 将欲装入之内存模块以约 45 度角的方式置放于插槽中。平均施力直到内存完全插入插槽中。



4. 关上 NAS 外盖然后锁上螺丝，最后将电源及网络线重新插回至 NAS 上。

5.2 TBS-453A

1. 请拆下 NAS 底部的橡胶垫脚并拧松四个手拧螺丝。然后，抬起上盖。



2. 要取出内存模块，请拉动每侧的固定夹，使模块向上倾斜，以便拆下。



注意：请务必确保内存模块安装在主（红色）插槽。否则，系统将无法启动。支持的最大内存总和为 8GB。



3. 以 45 度倾角（近似）使内存模块向插槽滑动，并向下按压内存模块，直至其卡入到位。确

保内存模块正确安放，固定夹卡入到位。



4. 合上 NAS 盖，固定四个手拧螺丝，并重新安好橡胶垫脚。重新连接 NAS 的电源线和网线。

5.3 TS-451S、TS-531P、TS-651、TS-831X、TS-851、TS-x53/x53S Pro、TS-563、TVS-x63, TS-x53A 系列 (2/4/6/8-bay 型号)

请依照以下说明安装额外的内存模块至 NAS 升级内存。

1. 移除 NAS 背面的三颗螺丝。



2. 小心地移除 NAS 的外壳。



3. 找到扩充内存插槽，并确认插槽没有安装任何内存。

注意：对于 TS-x53/x53S Pro、TS-451S、TS-531P、TS-651、TS-851 和 TS-x53A 型号，请始终确保内存模块安装在主插槽（红色）。否则，系统将无法启动。支援的最大内存总和为 8GB。



4. 小心握住内存模块边缘，将模块金边上的接口与内存插槽的接口对齐。以大约 45 度角斜放内存，将内存推入插槽。



5. 平均施力压下内存模块，直至内存模块插入正确的位置。
6. 将模块向背板方向旋转直至扩充插槽两端的固定片吻合。

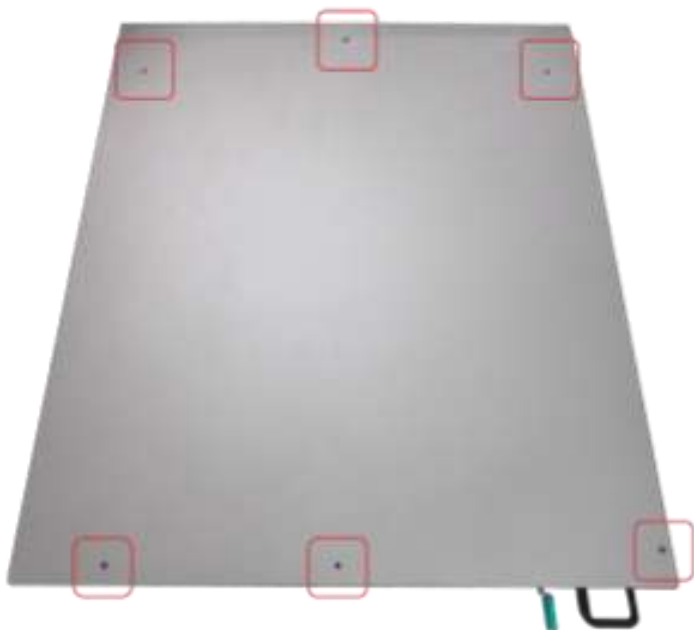


7. 将 NAS 外壳盖上并锁上螺丝，重新连接电源变压器、电源线及网络线等。

8. 要检查内存模块是否成功被 NAS 侦测，请开启 NAS 电源，然后以管理者账号登入网页管理接口。在 [系统状态] > [系统信息] 页面的 [硬件信息] 检视内存总容量。

5.4 TS-431U、TS-451U、TS-x53U 系列、TS-x63U 系列(4/8/12-bay 型号)

1. 开启 NAS 上盖。
 - a. TS-431U、TS-451U、TS-453U、TS-463U：删除 NAS 上方所有的螺丝。



- b. TS-853U、TS-863U、TS-1253U、TS-1263U：移除 NAS 背面的两颗螺丝。



2. 开启上盖。拉动每侧的固定夹，使模块向上倾斜，以便拆下。拆下内存模块。



3. 以大约 45 度角斜放内存，将内存推入插槽。



4. 压下内存模块。确认模块正确安装并与扩充插槽两端的固定片吻合。



注意：针对 TS-x53U 及 TS-451U 机型，请务必确认将内存模块安装在主要插槽（红色）中。否则，系统将会无法启动。支持的最大内存总容量为 8GB。



5. 盖好 NAS 上盖并锁上螺丝，重新连接电源变压器、电源线及网络线等。

5.5 TS-251、TS-251+、TS-451、TS-451+

1. 移除 NAS 背面（顶部与底部）的螺钉。如果是一款 2-bay NAS，它将会有**两颗**螺钉。一个 4-bay NAS 将有**四颗**螺钉。



2. 轻轻地滑动以移除 NAS 的外壳（参阅 NAS 底面的 NAS 未开锁/已开锁图片指示）



3. 移除硬盘盒内部的四颗螺钉(每侧两颗)。



4. 如果是一个 4-bay NAS，您还需要移除硬盘盒顶部的两颗螺钉。



5. 轻轻地从插槽中抬起硬盘盒以将其从 NAS 移除。



6. **始终确保内存模块安装在主插槽（红色）。**否则，系统将无法启动。当要安装两个内存模块时，请确保它们为同样大小，并且使用相同类型的 RAM 内存插槽。支援的最大内存总和为 8GB。



7. 重新安装硬盘盒至 NAS。请确保它正确地插入到插槽中。



8. 紧固四颗内部螺钉以固定硬盘盒（对于 4-bay NAS，还需拧紧另外的两颗顶部螺钉）。然后轻轻地滑动 NAS 盒盖以重新将其固定。
9. 将 2/4 颗螺钉拧紧在 NAS 的背板上。
10. 重新插入您的硬盘至 NAS。
11. 将电源适配器和电缆重新连接到 NAS。
12. 要检查内存模块是否被 NAS 识别，请启动 NAS 并以管理员身份登入至网页界面。至 [系统状态] > [系统信息]，在[硬件信息]中检查内存总容量。

5.6 TS-453S

1. 松开 NAS 底部四颗螺丝和后方面板上的两颗螺丝，然后将 NAS 底板移除。



2. 拨开内存插槽两侧的固定片，并将原本的内存模块移除。



注意：若您仅需安装一条内存模块，请务必确认将该内存模块安装在主要插槽中（图中标示 DIMM1 处）。否则，系统将无法启动。支持的最大内存总和为 8GB。



3. 以大约 45 度角斜放内存模块，然后将内存模块推入插槽，下压直到固定。请确认内存模块已装妥，且两侧固定片已固定住内存模块。



4. 盖上 NAS 底盖，并将其用螺丝锁紧（螺丝位置请参考步骤 1）。重新连接电源变压器、电源线、及网络线等。

第6章 安装网络扩充卡



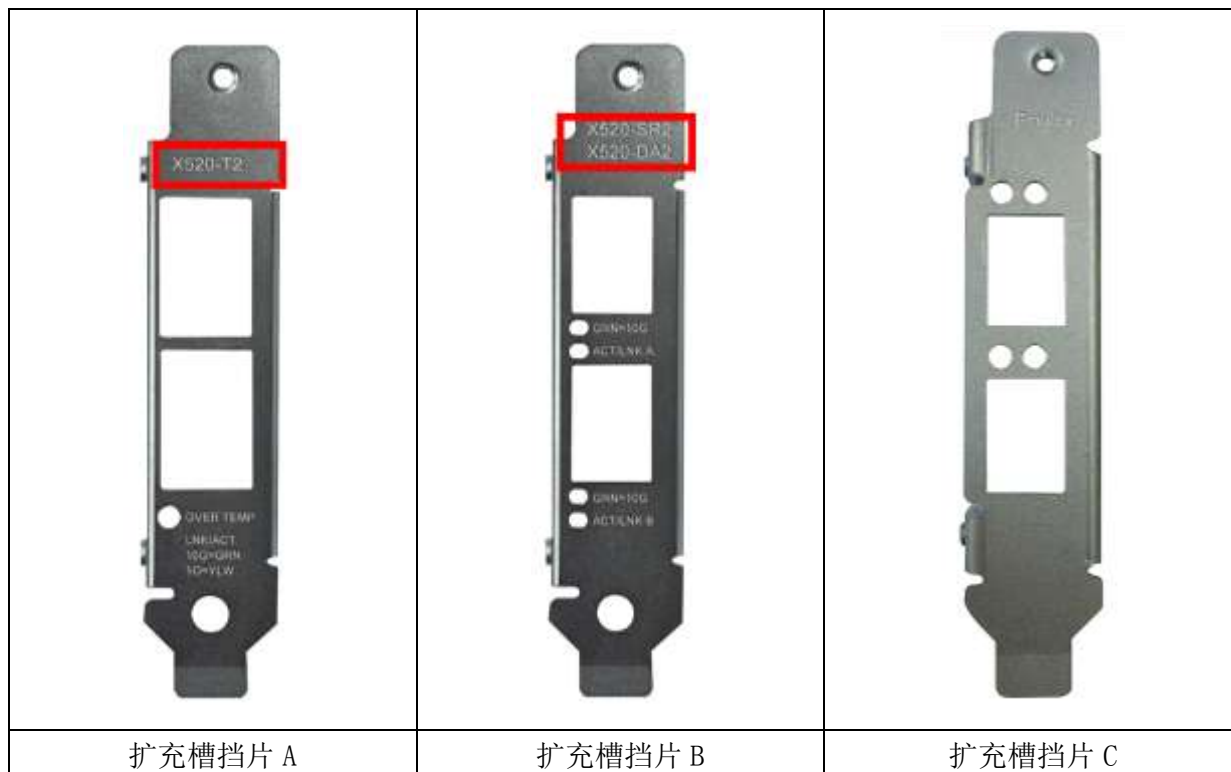
警告:

- 以下操作说明必须由授权及合格的技术人员进行。
- 请务必依照以下说明安装 RAM 模块至 NAS，否则将有可能导致身体伤害甚至死亡。

特定 NAS 会配备网络卡扩充插槽，用户可以安装额外的网络扩充卡（需另购）至 NAS 的主板以增加网络带宽。如需兼容性列表，请参考 <http://qnap.com/compatibility>。

6.1 TVS-463、TS-531P、TVS-663、TS-831X、TVS-863、TS-563、TS-879 Pro、TS-1079 Pro、TS-463U 及 TS-463U-RP

请参考以下内容，为网络扩充卡更换合适的扩充槽挡片。



	兼容网络扩充卡
扩充槽挡片 A (X520-T2)	Intel® Ethernet Server Adapter X520-T2 (E10G42B)
扩充槽挡片 B (X520-SR2/X520-DA2)	Intel® Ethernet Server Adapter X520-SR2 (E10G42BFSR) Intel® Ethernet Server Adapter X520-DA2 (E10G42BTDA)
扩充槽挡片 C (Emulex)	1. Emulex OneConnect 10GbE Network Adapters, SFP+ Direct attach copper (OCe11102-NX) 2. Emulex OneConnect 10GbE Network Adapters, Short reach optical (OCe11102-NM) 3. Emulex OneConnect 10GbE Network Adapters, SFP+ Direct attach copper (OCe11102-IX) 4. Emulex OneConnect 10GbE Network Adapters, Short reach optical (OCe11102-IM)

1. 关闭 NAS 电源，移除 NAS 的电源变压器、网络线及其它连接装置及连接线。
2. 安装网络扩充卡前，请先戴上防静电的手腕带，并确保接地线接至地上。
3. 移除 NAS 背面的螺丝。



4. 小心地移除 NAS 的外壳。



若为 TVS-463：取出外部螺丝然后移除电源供应器。



5. 移除螺丝及扩充插槽的面板。



6. 小心握住网络扩充卡的边缘，将扩充卡金边上的接口与插槽的接口对齐。将网络扩充卡插入插槽直至完全紧合。



7. 锁上螺丝。



8. 将 NAS 外壳盖上并锁上螺丝，重新连接电源变压器、电源线及网络线等。

9. 要检查网络扩充卡是否成功被 NAS 侦测，请开启 NAS 电源，然后以管理者账号登入网页管理接口。在 [系统状态] > [网络] > [TCP/IP] 页面检查网络接口的数目。

6.2 TS-463U、TS-463U-RP 及 TVS-471U

1. 关闭 NAS 电源，移除 NAS 的电源变压器、网络线及其它连接装置及连接线。
2. 安装网络扩充卡前，请先戴上防静电的手腕带，并确保接地线接至地上。
3. 删除 NAS 背面上所有螺丝。



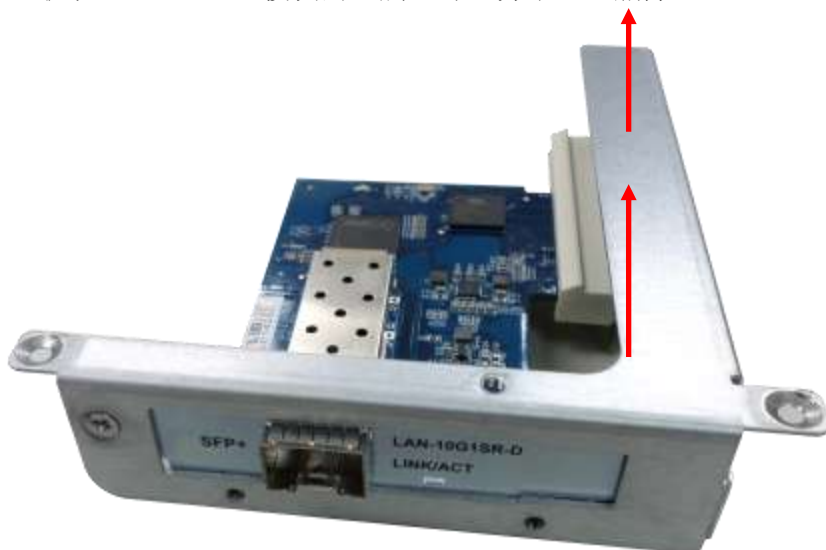
4. 用双手将上盖拉出卸下。



5. 如图标删除 Riser Card 模块螺丝。



6. 握住 Riser Card 模块的金属边缘，并小心地删除 Riser Card 模块。



7. 删除网络扩充卡 / 档片。

- a. TS-463U 及 TS-463U-RP: 删除螺丝以及网络扩充卡。



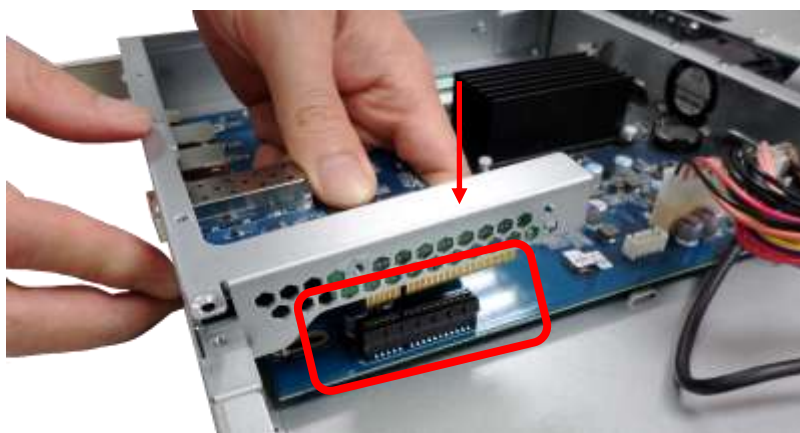
- b. TVS-471U: 删除螺丝以及档片。



8. 将新的网络扩充卡插入 Riser Card 模块直至完全紧合，然后锁上螺丝。



9. 将 Riser Card 模块金边上的接口与 PCIe 插槽的接口对齐。将 Riser Card 模块插入 PCIe 插槽直至完全紧合。



10. 锁上螺丝。将 NAS 外壳盖上并锁上螺丝。



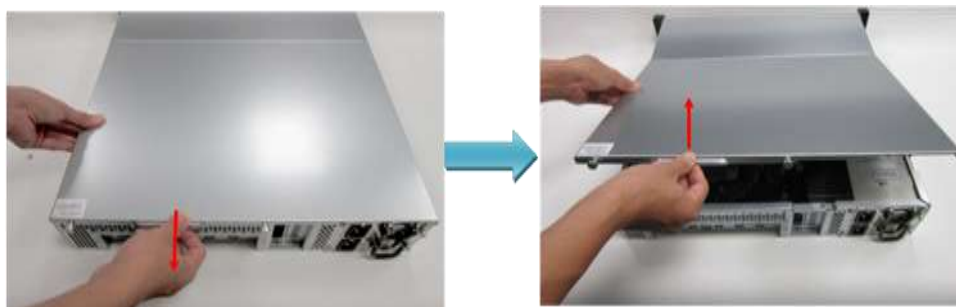
11. 重新连接电源变压器、电源线及网络线等。
12. 要检查网络扩充卡是否成功被 NAS 侦测，请开启 NAS 电源，然后以管理者账号登入网页管理接口。在 [系统状态] > [网络] > [TCP/IP] 页面检查网络接口的数目。

6.3 TS-863U、TS-863U-RP、TS-1263U 及 TS-1263U-RP

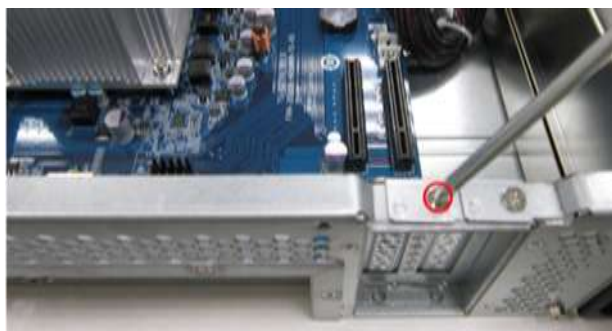
1. 关闭 NAS 电源，移除 NAS 的电源变压器、网络线及其它连接装置及连接线。
2. 安装内存模块前，请先戴上防静电的手腕带，并确保接地线接至地上。
3. 移除 NAS 背面的两颗螺丝。



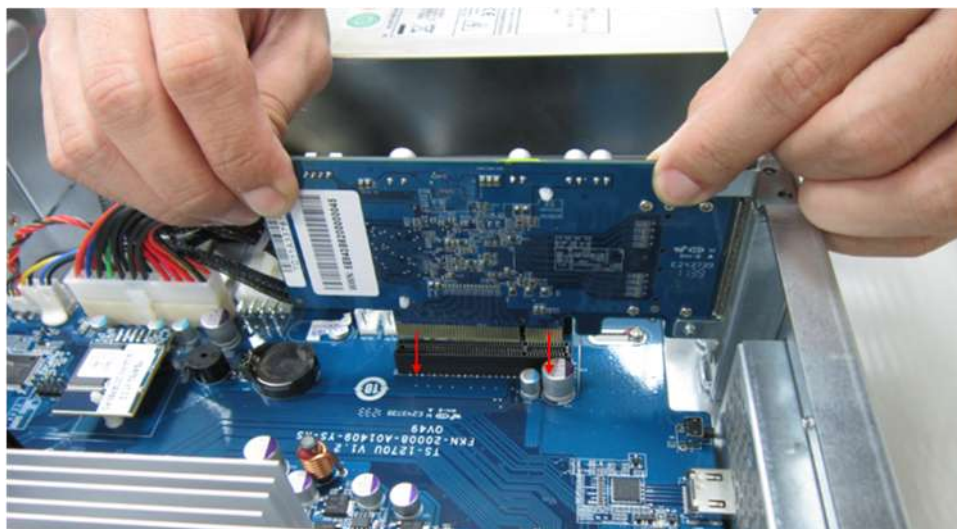
4. 握住上盖边缘沟槽拉出上盖，用双手将上盖卸下。



5. 移除螺丝及扩充插槽的面板。



6. 小心握住网络扩充卡的边缘，将扩充卡金边上的接口与插槽的接口对齐。将网络扩充卡插入插槽直至完全紧合。



7. 锁上螺丝。



8. 将 NAS 外壳盖上并锁上螺丝，重新连接电源变压器、电源线及网络线等。
9. 要检查网络扩充卡是否成功被 NAS 侦测，请开启 NAS 电源，然后以管理者账号登入网页管理接口。在 [系统状态] > [网络] > [TCP/IP] 页面检查网络接口的数目。

第7章 安装及热抽换硬盘



注意：

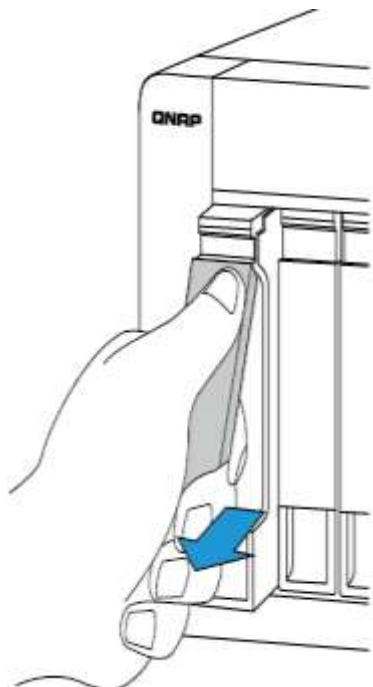
- 在您开始执行任何步骤之前，请务必关闭 NAS 电源，移除 NAS 的电源变压器、网络线及其他连接装置及连接线。
- 在安装内存模块前，请先戴上防静电的手腕带，并确保接地线接至地上。

7.1 安装硬盘

请参考以下步骤在 NAS 上安装硬盘。

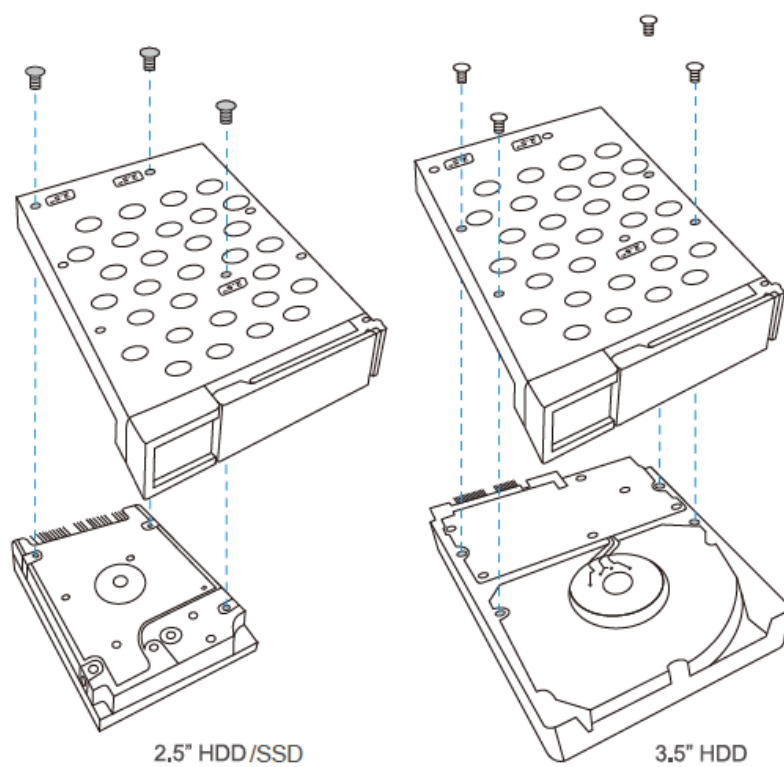
7.1.1. TVS-x63、TS-563、TS-x53 Pro、TS-651、TS-831X、TS-851、TS-531P 及 TS-x53A

1. 打开并抽出硬盘托盘。

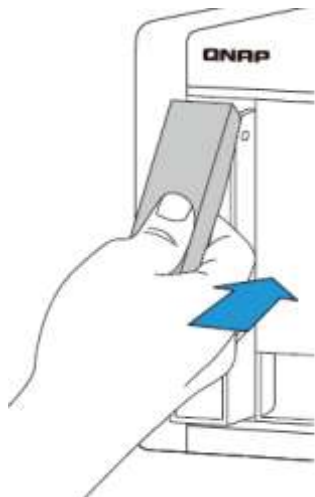


2. 安装硬盘：
 - a. 3.5" 硬盘：将硬盘由托盘底部用四颗螺丝锁住。

b. 2.5"硬盘：依照托盘底部标示用三颗螺丝锁住硬盘。

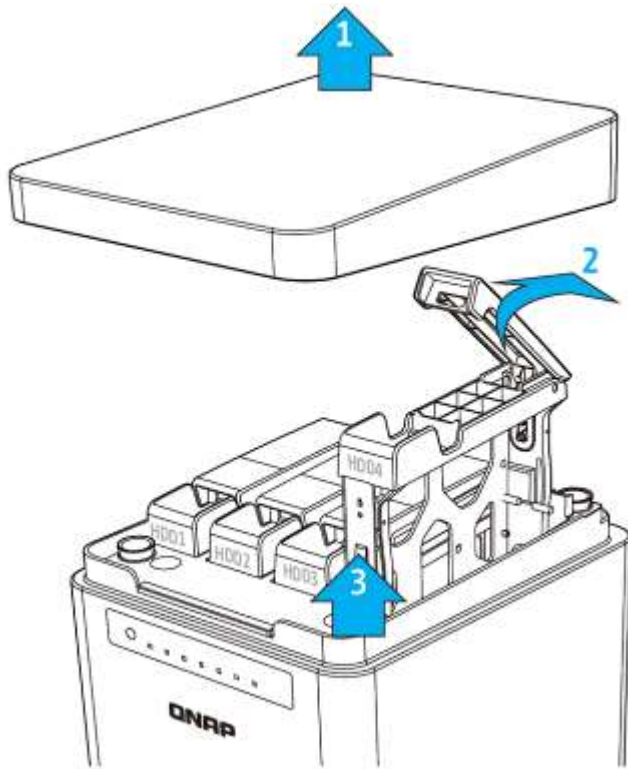


3. 将装有硬盘的硬盘托盘插入至 NAS 底部，直到听到咯一声。



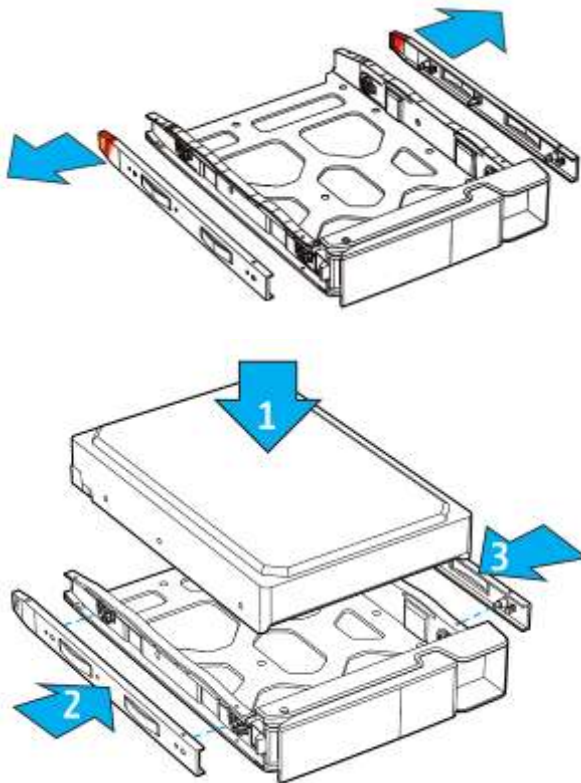
7.1.2. TS-453Mini

1. 移除上盖，打开然后抽出硬盘托盘。

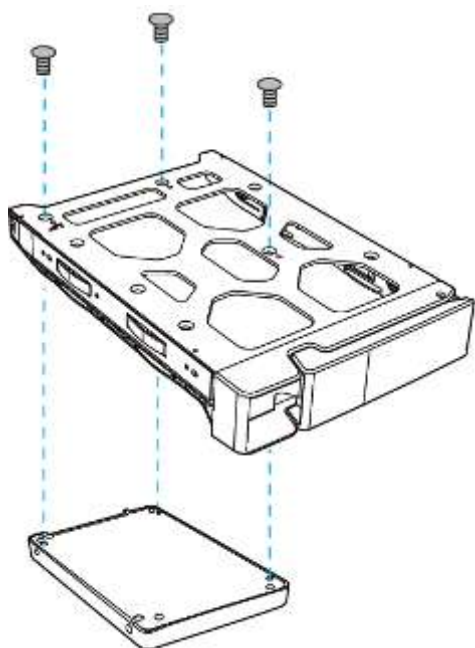


2. 安装硬盘：

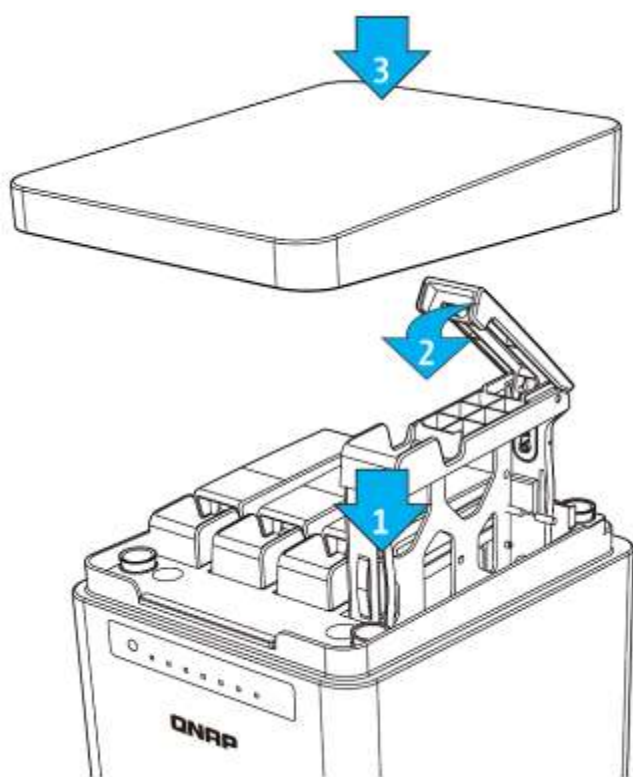
- a. 如为 3.5” 硬盘，移除托盘两侧之固定片（在固定片上标有 Pull 处将固定片往外拨）。将硬盘放入托盘上并将两侧固定片装回托盘（请将固定片对准托盘孔洞后再行装上）。



- b. 如为 2.5” 硬盘或固态硬盘，先将靠近 2.5” 托盘孔洞那边的固定片删除（您可在托盘底部看到 2.5” 托盘孔洞标示），然后将硬盘由托盘底部用三颗螺丝锁住。

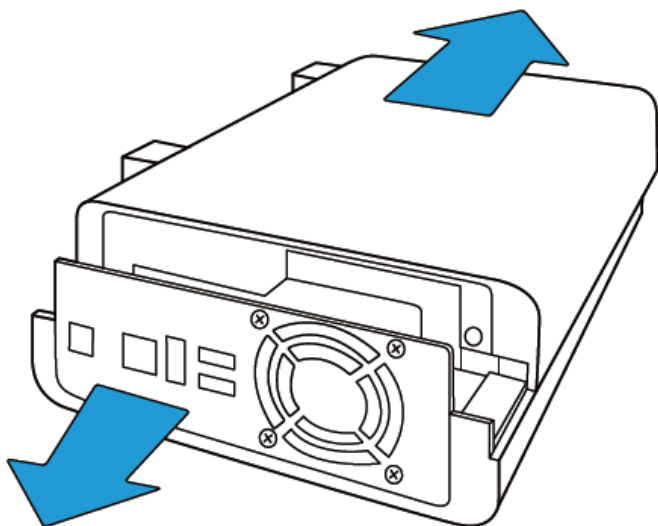


3. 将装有硬盘的硬盘托盘插入至 NAS 底部，然后关上上盖。

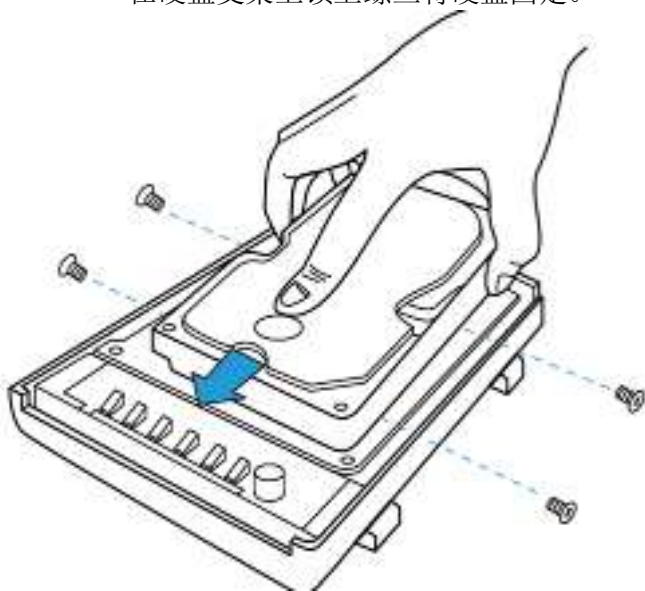


7. 1. 3. TS-112P、TS-212P 及 TS-251C

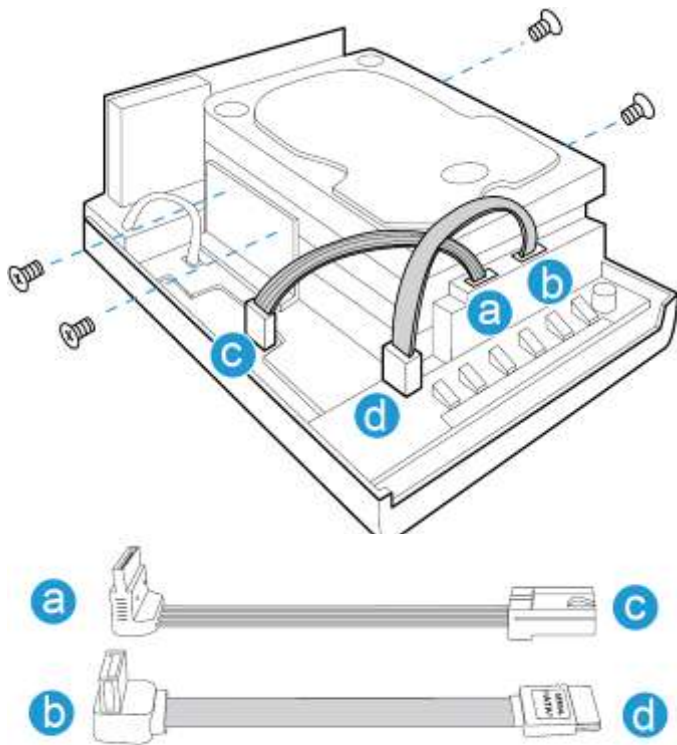
1. 松开NAS后面的螺丝（左上方跟左下方）。向前推出并移除外壳（NAS下方有锁上及打开图示可供参考）。



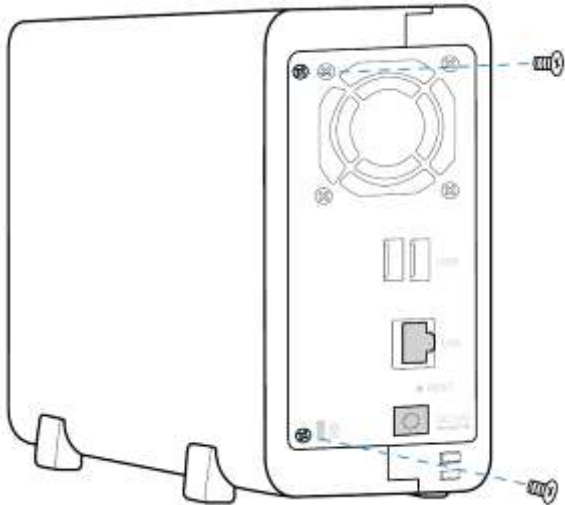
2. 安装硬盘：
 - a. TS-112P: 将硬盘放入硬盘支架上，将硬盘向前推直，至与主板上之硬盘插槽密合。在硬盘支架上锁上螺丝将硬盘固定。



- b. TS-212P 及TS-251C: 将第一颗硬盘放入硬盘支架上，将硬盘向前推，直至与主板上之硬盘插槽密合。将第二颗硬盘放在第二颗硬盘上，在硬盘支架上替两颗硬盘锁上螺丝以将起固定。插入SATA信号线及电源。

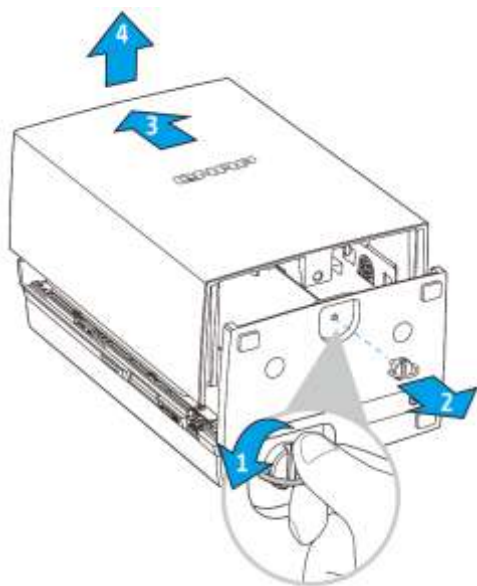


3. 装妥硬盘之后，盖上NAS外壳并在后方锁上螺丝。最后，将NAS直立。

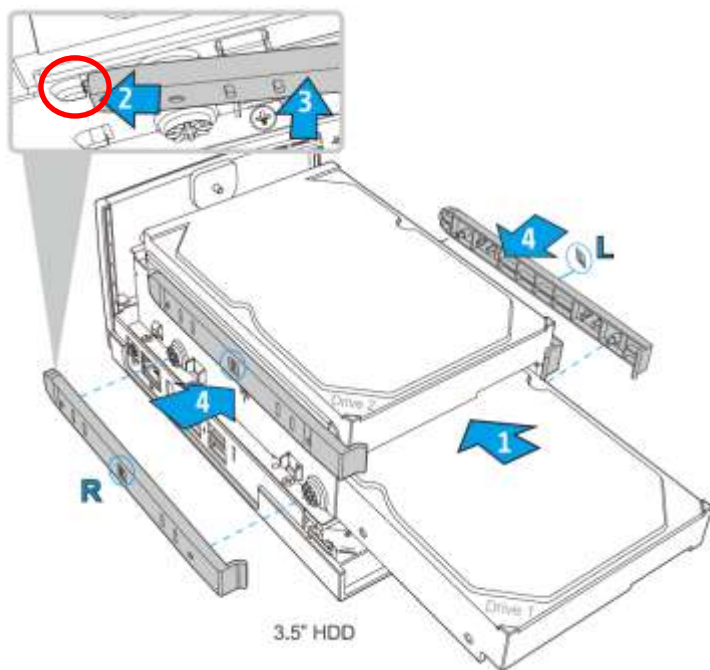


7.1.4. TAS-168、TAS-268、TS-128 及 TS-228

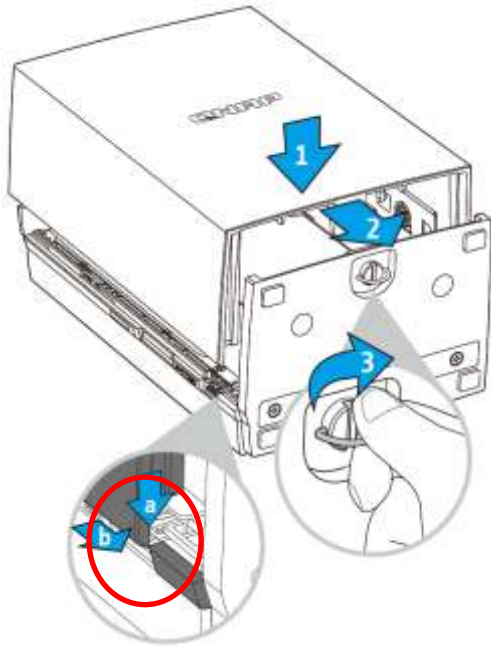
1. 拆下手拧螺丝和上盖。



2. 将第一颗硬盘放入硬盘支架上，将硬盘向前推，直至与主板上之 SATA 硬盘插槽密合，接着将两侧固定片装回硬盘支架。在装上固定片时，请先将固定片顶端插入图中之点 2，然后再将固定片朝托盘按下（若为 TAS-268，请重复相同步骤装入第二颗硬盘）。

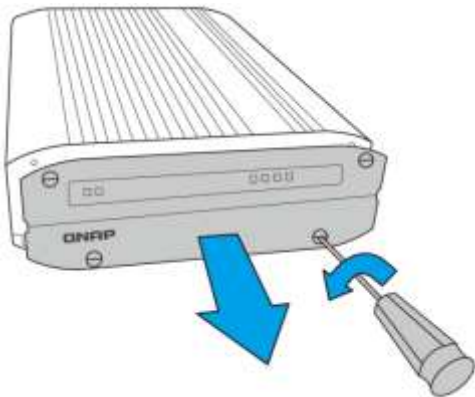


3. 将图中之上盖 a 点对准底座 b 点，将上盖向前推，接着锁紧底部螺丝。

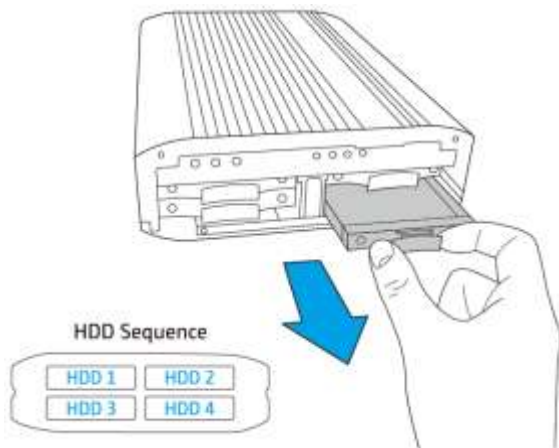


7. 1. 5. IS-453S

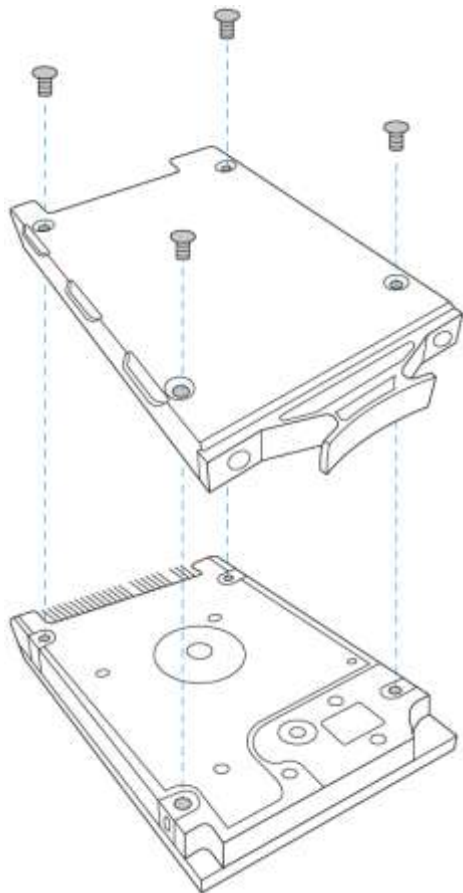
1. 松开并移除前面板上的四个螺丝。



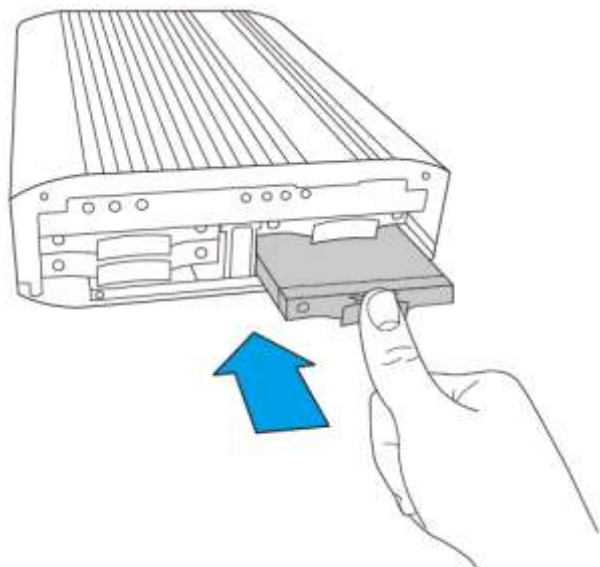
2. 抽出硬盘插槽。



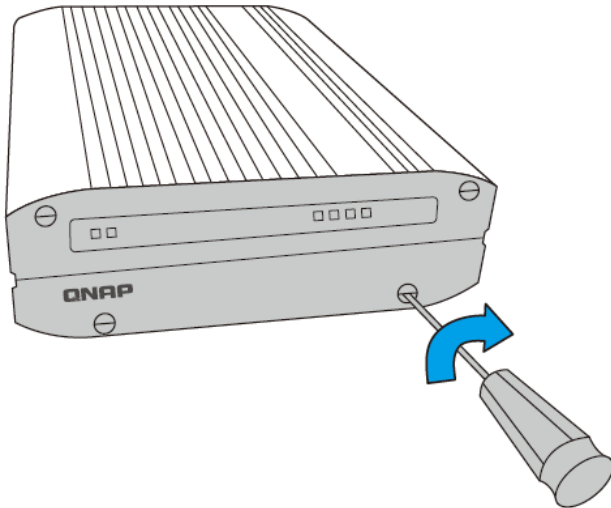
3. 将硬盘固定至硬盘插槽上，并锁上螺丝。



4. 将装有硬盘的硬盘插槽装入至NAS内。

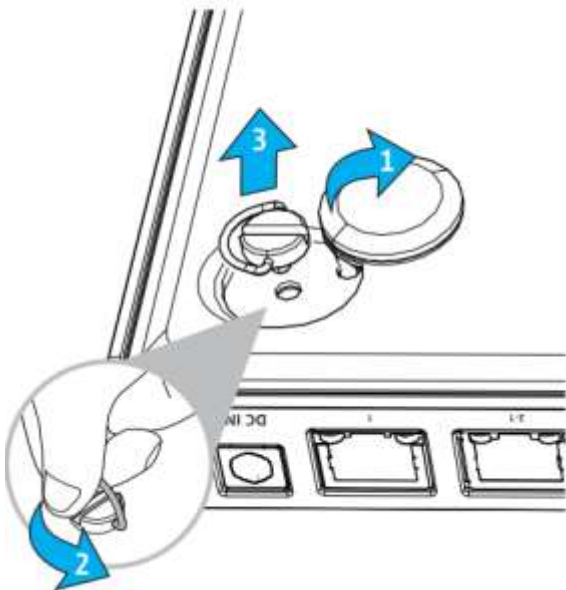


5. 重复步骤2至4来安装剩下的硬盘，（请依照步骤2中的硬盘顺序来进行安装）。
6. 固定并锁紧前方面板。

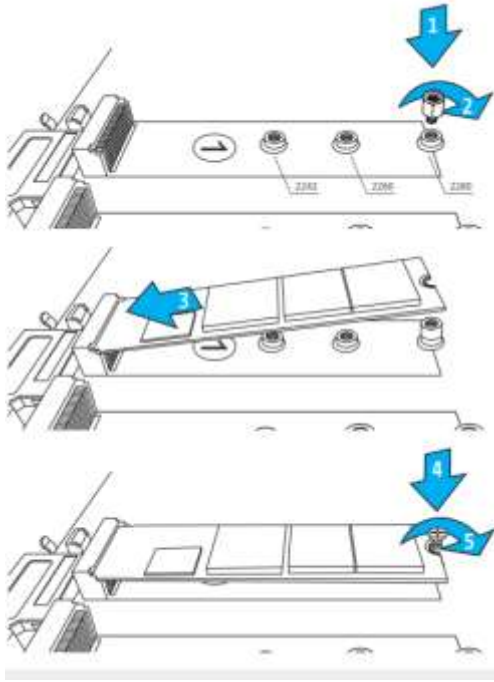


7. 1. 6. TBS-453A

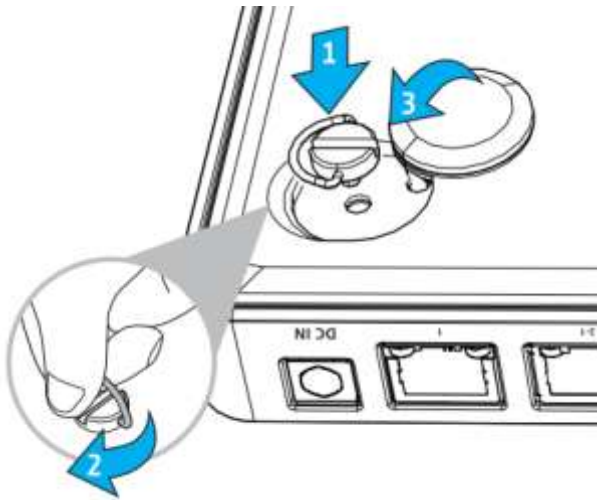
1. 系统包含四个 M.2 SSD 插槽，四个插槽均位于系统底部。可通过向空闲 M.2 插槽增加 M.2 SSD 模块、或者升级现有 M.2 SSD 模块的方式提升系统存储能力。以下步骤演示了如何增加/更换 M.2 SSD 模块。要拆下底盖，应先拆下橡胶垫脚。接下来，逆时针拧动底盖四角的四个螺丝，将螺丝拧下。



2. TBS-453A 支持使用 3 种不同尺寸的 M.2 SSD (2242、2260 和 2280)。按照 M.2 SSD 的尺寸将竖板螺丝移动到合适位置并固定好。然后，将 M.2 SSD 插入到插槽中，并用随附的螺丝将其固定到位。



3. 将四角的螺丝拧紧（顺时针），将底盖装回系统。然后，安装橡胶垫脚。



7.2 热抽换硬盘

QNAP NAS 支持各大硬盘品牌之 2.5 吋/3.5 吋 SATA 硬盘，有关支持硬盘信息，请至威联通网站查询：<http://www.qnap.com>。



注意：

- 威联通不负任何责任、原因下错误安装或使用硬盘所导致的产品损坏与不正常运作下的数据损失。
- 若要安装之硬盘从未被安装至 NAS，硬盘将会自动被格式化，硬盘上的数据会被清除。

系统型号	支持 3.5 吋 SATA 硬盘	支持 2.5 吋 SATA 硬盘	支持 SSD 固 态硬盘	支持硬盘热抽换 (RAID 1 或以上 磁盘组态)
TS-112P、TS-212P、TS-251C	✓			
TAS-168、TAS-268、TS-128、 TS-228	✓			
HS-210、HS-251、 HS-251+、TS-131、 TS-231、TS-231+、 TS-251、TS-251+、TS-431、 TS-431+、TS-431U、TS-451、 TS-451+、TS-651、TS-851、TS-253 Pro、TS-453 Pro、TS-453S Pro、 TS-531P、TS-563、TS-653 Pro、 TS-853 Pro、TS-853S Pro、TS-879 Pro、TS-1079 Pro、TS-879U-RP、 TS-1279U-RP、TS-EC879U-RP、 TS-EC1279U-RP、TS-1679U-RP、 TS-EC1679U-RP、TS-451U、 TS-453U、TS-453U-RP、TS-853U、 TS-853U-RP、TS-1253U、 TS-1253U-RP、TS-870U-RP、 TS-1270U-RP、TS-470/470 Pro、 TS-670/670 Pro、TS-870/870 Pro、TVS-463、TVS-663、TS-831X、 TVS-863、TVS-863+、TS-453minI、 TS-463U、TS-463U-RP、TS-863U、 TS-863U-RP、TS-1263U、 TS-1263U-RP、TS-531P、 TS-253A、TS-453A、TS-653A、 TS-853A	✓	✓	✓	✓

系统型号	支持 3.5 吋 SATA 硬盘	支持 2.5 吋 SATA 硬盘	支持 SSD 固态硬盘	支持硬盘热抽换 (RAID 1 或以上磁盘组态)
TS-451S、TS-453S Pro、TS-853S Pro、IS-453S		✓	✓	✓
TBS-453A			✓ M.2	

NAS 支持热抽换 RAID 1 组态内一颗失效硬盘或 RAID 5/RAID 6 组态内一至两颗失效硬盘。请依照以下说明热抽换 RAID 磁盘组态中失效的硬盘：

1. 登入 NAS，于 [硬盘管理] 页面检查硬盘群组的状态。
2. 硬盘群组的状态应为 [降阶模式]。
3. 准备一颗新的硬盘，硬盘的容量应该与原来的硬盘容量相同或大于原来的硬盘。
4. 将 NAS 的失效硬盘拔出。等待 20 秒或直至 NAS 发出两次哔声。
5. 将失效硬盘从硬盘抽取盒上移除。
6. 安装新的硬盘至硬盘抽取盒，然后安装至 NAS。
7. 系统会发出两次哔声（每次约 1.5 秒）。
8. 在管理页面再次检查硬盘群组状态，状态应为 [重建中]。



警告： 为避免触电，强烈建议使用者在更换硬盘前，先关闭系统。

第8章 RAID 回复

QNAP NAS 支持独家 RAID 复原技术，若 NAS 设定为 RAID 1、RAID 5 或 RAID 6 磁盘阵列，并有硬盘意外地被移除，使用者可以将被移除的硬盘插回原来的硬盘插槽，然后在页面按 [回复]，磁盘阵列的状态将由 [未启动] 回复至 [降级模式]。

如硬盘群组设定为 RAID 0 或 JBOD，并有一颗或以上硬盘意外地被移除，使用者可以使用此功能将磁盘组态由 [未启动] 回复至 [正常]。

磁盘组态	支援 RAID 回复	允许被移除的最大硬盘数目
单独硬盘	否	-
JBOD	是	1 颗或以上
RAID 0	是	1 颗或以上
RAID 1	是	1 颗或 2 颗
RAID 5	是	2 颗或以上
RAID 6	是	3 颗或以上
RAID 10	否	-

如硬盘群组状态为 [未启动]，使用者可以将原来的硬盘安装至 NAS 上原来的硬盘插槽，然后在 [磁盘管理]> [硬盘管理] 页面按 [回复]，请等候约 60 秒，之后便可以重新存取数据。

注意：

- 将 RAID 1、RAID 5 或 RAID 6 磁盘群组从 [未启动] 回复至降阶模式后，使用者可以正常读写数据，磁盘群组在数据同步后，将回复至正常状态。
- 如被移除的硬盘已损毁，复原功能将无法使用。

	一般 RAID 5	QNAP RAID 5	一般 RAID 6	QNAP RAID 6
降阶模式	N-1	N-1	N-1 & N-2	N-1 & N-2
只读保护（供实时数据备份或硬盘更换）	N/A	N-1, 在数组其余硬盘成员中发现有损坏扇区 (bad blocks)	N/A	N-2, 在数组其余硬盘成员中发现有损坏扇区 (bad blocks)
RAID 回复 (RAID 状态: 未启动)	N/A	重新安装原有硬盘至 NAS 上, 硬盘可以运转、可被辨认及存取, 硬盘的 Superblock 没有损坏。	N/A	重新安装原有硬盘至 NAS 上, 硬盘可以运转、可被辨认及存取, 硬盘的 Superblock 没有损坏。
RAID 损毁	N-2	N-2, 其余硬盘成员无法运转、被辨认及存取。	N-3	N-3, 其余硬盘成员无法运转、被辨认及存取。

N = 磁盘阵列中的硬盘数目。

第9章 使用 LCD 面板

*此功能只适用于配有 LCD 面板的机种，详情请参考 <http://www.qnap.com>。

NAS 提供方便的 LCD 面板，让使用者设定硬盘组态及检视系统信息。

系统开始时，会显示服务器名称及 IP 地址：

```
N A S 5 F 4 D E 3
1 6 9 . 2 5 4 . 1 0 0 . 1 0 0
```

第一次安装时，LCD 面板会显示侦测到的硬盘数目及 IP 地址，使用者可以视硬盘数目设定硬盘组态。

硬盘数目	预设硬盘组态	可供选择的硬盘组态*
1	Single (单独硬盘)	Single
2	RAID 1	Single -> JBOD -> RAID 0 -> RAID 1
3	RAID 5	Single -> JBOD -> RAID 0 -> RAID 5
4 或以上	RAID 5	Single -> JBOD -> RAID 0 -> RAID 5 -> RAID 6

*按 ‘Select’ 按钮选择要设定的项目，按 ‘Enter’ 按钮确定。

例如，NAS 已安装五颗硬盘，LCD 面板会显示：

```
C o n f i g . D i s k s ?
-> R A I D 5
```

按 ‘Select’ 按钮浏览其它选项，如 RAID 6。按 ‘Enter’ 按钮选择所需设定的组态，按 ‘Select’ 按钮选择 ‘Yes’。

```
C h o o s e R A I D 5 ?
-> Y e s N o
```

执行RAID 1、RAID 5或RAID 6设定时，系统会格式化硬盘、建立RAID磁盘阵列、格式化RAID磁盘阵列，然后将磁盘组态挂载至NAS，使用者可以在LCD面板检视进度，当进度达100%时，使用者可以存取磁盘组态（如建立共享资料夹或上载档案至NAS）。系统在完成以上步骤后，会执行RAID数据同步，使用者可以在 [磁盘管理] > [硬盘管理] 页面检视进度，同步速度约30-60 MB/s（视硬盘型号、系统资源使用状况等而定），数据同步执行时，仍可存取磁盘。

注意：如RAID磁盘组态的其中一颗硬盘于同步时被移除或失效，RAID磁盘组态会进入降阶模式（degraded mode），装置的数据仍可被读取，若更换新的硬盘至装置，系统便会开始重组磁盘组态。使用者可以在 [硬盘管理] 页面检视硬盘组态的状态。

若要增加硬盘群组的安全性，请于<Encrypt Volume?>设定选择 ‘Yes’（系统预设的密钥密码为admin），若需要变更密钥密码，请透过使用者管理页面 [装置设定] > [硬盘/硬盘群组] 网页进行修改。

E	n	c	r	y	p	t		V	o	l	u	m	e	?	
→	Y	e	s			N	o								

设定完成后，面板会显示系统名称及IP地址，如NAS无法设定硬盘组态，将显示以下讯息。

C	r	e	a	t	i	n	g	.	.	.					
R	A	I	D	5		F	a	i	l	e	d				

注意：数据加密功能因部份国家或地区之相关法例限制而不提供。

使用LCD面板检视系统信息

当NAS的LCD面板显示系统名称及IP地址时，可以按 ‘Enter’ 按钮进入Main Menu（主选单）。

Main Menu提供以下选项：

1. TCP/IP
2. Physical disk
3. Volume
4. System
5. Shut down
6. Reboot
7. Password
8. Back

1. TCP/IP

在TCP/IP，可以检视以下项目：

- LAN IP Address
- LAN Subnet Mask
- LAN Gateway
- LAN PRI. DNS
- LAN SEC. DNS
- Enter Network Settings
 - ✓ Network Settings - DHCP
 - ✓ Network Settings - Static IP*
 - ✓ Network Settings - BACK
- Back to Main Menu

* 在 ‘Network Settings - Static IP’ ，可以设定 LAN 1 及 LAN 2 的 IP 地址、子网掩码、通讯闸以及 DNS。

2. Physical disk

在Physical disk，可以检视以下信息：

- Disk Info
- Back to Main Menu

硬盘信息包括硬盘的温度及容量。

D	i	s	k	:	1		T	e	m	p	:	5	0	°	C
S	i	z	e	:		2	3	2		G	B				

3. Volume

此选项显示NAS的硬盘组态，第一行显示硬盘组态及容量，第二行显示组态的硬盘成员。

R	A	I	D	5							7	5	0	G	B
D	r	i	v	e		1	2	3	4						

如有多于一个硬盘群组，按 ‘Select’ 检视相关信息。以下为RAID 5硬盘群组的讯息说明。

LCD面板讯息	硬盘组态
RAID5+S	RAID5+spare
RAID5 (D)	RAID 5 degraded mode
RAID 5 (B)	RAID 5 rebuilding
RAID 5 (S)	RAID 5 re-synchronizing
RAID 5 (U)	RAID 5 unmounted
RAID 5 (X)	RAID 5 non-activated

4. System

此选项显示系统温度及风扇转速。

C	P	U		T	e	m	p	:		5	0	°	C		
S	y	s		T	e	m	p	:		5	5	°	C		

S	y	s		F	a	n	:	8	6	5	R	P	M		

5. Shut down

使用此选项关闭系统，按 ‘Select’ 按钮选择 ‘Yes’ ，然后按 ‘Enter’ 确定。

6. Reboot

使用此选项重新启动系统，按 ‘Select’ 按钮选择 ‘Yes’ ，然后按 ‘Enter’ 确定。

7. Password

LCD面板的预设密码为空白。使用此选项变更LCD面板密码，按 ‘Yes’ 继续。

```
C h a n g e P a s s w o r d
Y e s → N o
```

密码最多为8个数字位（0-9），输入完成后，选择 ‘OK’，按 ‘Enter’ 按钮，然后再确认一次新密码。

```
N e w P a s s w o r d :
O K
```

8. Back

选择此项目回到主目录 (Main Menu)。

系统讯息

当系统发生错误或异常状况时，LCD面板会显示系统讯息，按 ‘Enter’ 按钮检视讯息内容，再按一下 ‘Enter’ 可检视下一个讯息。

```
S y s t e m E r r o r !
P l s . C h e c k L o g s
```

系统讯息	说明
Sys. Fan Failed	系统风扇异常
Sys. Overheat	系统过热
HDD Overheat	硬盘过热
CPU Overheat	CPU过热
Network Lost	在Failover或Load balancing模式下，LAN 1及LAN 2网络联机中。
LAN1 Lost	LAN 1网络联机中
LAN2 Lost	LAN 2网络联机中
HDD Failure	硬盘异常
Vol1 Full	硬盘群组容量已满
HDD Ejected	硬盘被拔出
Vol1 Degraded	硬盘群组进入degraded mode（降阶模式）
Vol1 Unmounted	硬盘群组unmounted
Vol1 Nonactivate	硬盘群组未启动

第10章 安装电源供应器

注意：

- 以下说明只适用于机架式 NAS 型号。
- TS-879U-RP 及 TS-EC879U-RP 的电源供应器必须由授权及合格的技术人员进行。

10.1 1U Turbo NAS（配备热抽换 PSU）

注意： 以下操作说明必须由授权及合格的技术人员进行。

要安装额外的电源供应器至 1U Turbo NAS，请参考以下说明：

1. 关闭 NAS 电源。
2. 如图示移除螺丝及隔板。



3. 插入电源供应器并推至末端。



4. 锁紧螺丝。



5. 开启 NAS。

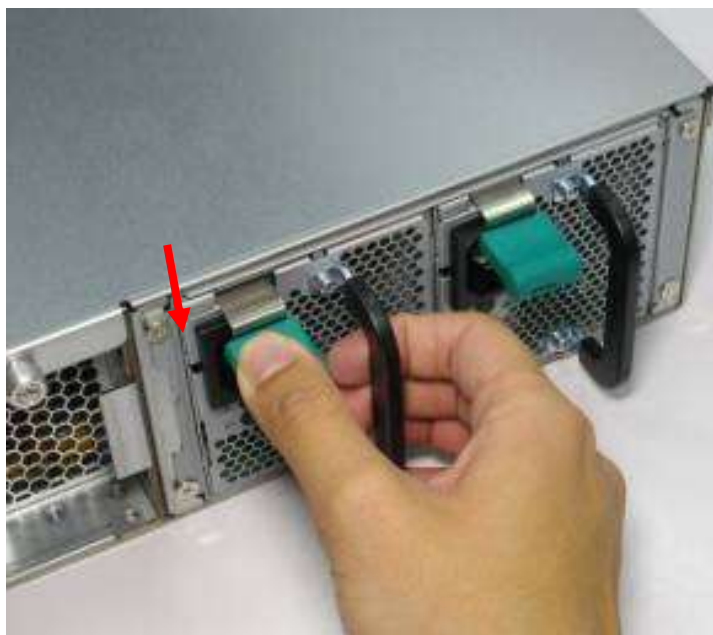
注意：要更换失效的电源供应器，请先关闭 NAS，然后拔出失效的电源供应器，再重复以上步骤 3-5 安装新的电源供应器。

10.2 2U/3U Turbo NAS（只适用于 TS-853U-RP 及 TS-1253U-RP）

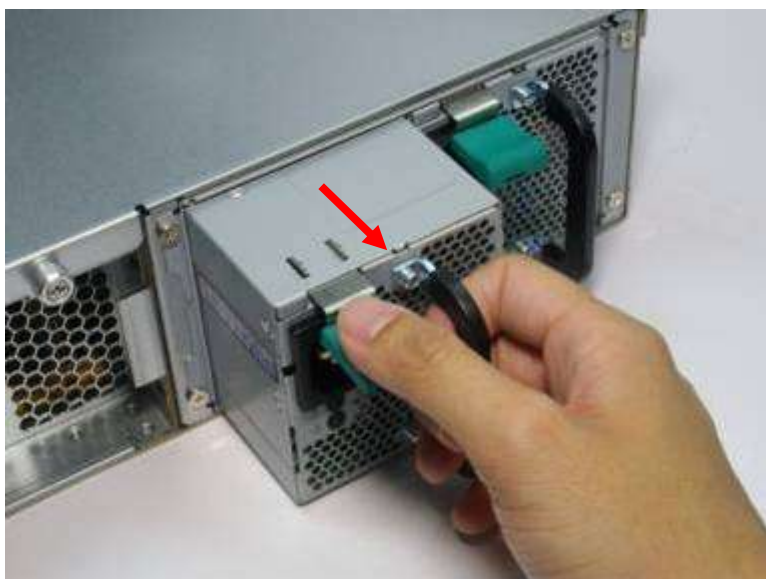
注意：以下操作说明必须由授权及合格的技术人员进行。

要更换 Turbo NAS 上的失效电源供应器，请参考以下说明：

1. 关闭 NAS 电源。
2. 握紧黑色手把并同时按下绿色杠杆。



3. 抽出失效的电源供应器。



4. 插入新的电源供应器至 NAS。



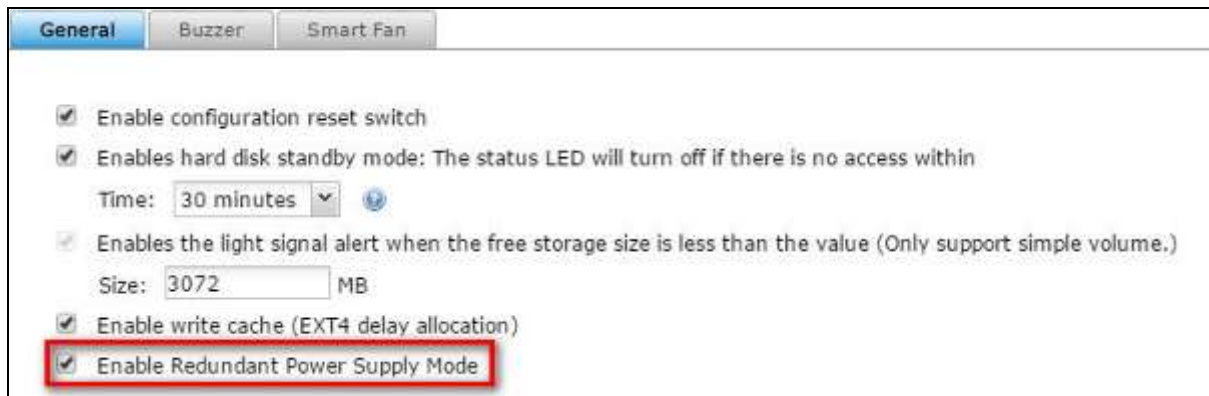
5. 开启 NAS。

于管理页面启动备援电源警告：

如 NAS 配备两组电源供应器，并已连接至电源插头，两颗电源供应器会同时供电（适用于 1U 及 2U 型号）。使用者可以登入 NAS 管理页面，进入 [系统管理] > [硬件设定] 启动 [备援电源供应模式]，当系统的电源供应器发生错误，如被拔除或失效，NAS 会发出声响，并在 [系统纪录] 页面记录错误讯息。

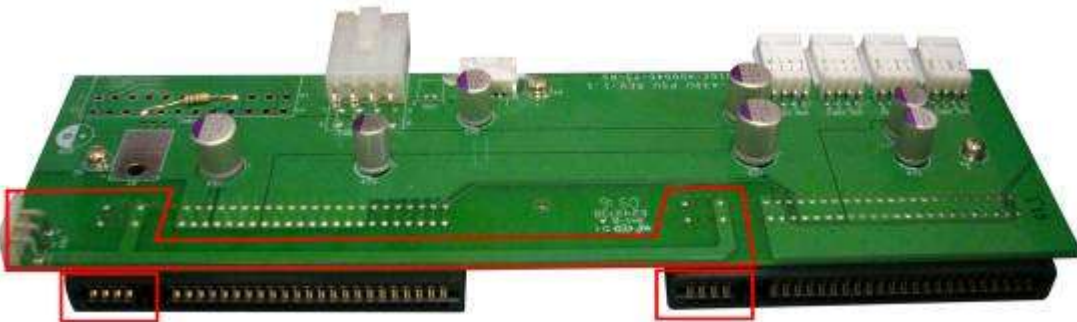
如 NAS 只安装一组电源供应器，建议不要启动此功能。

*此功能预设为关闭。



警告：触电危险

系统背板之接头（如下图红框所示）内藏高电压，切勿触摸此部份，以免触电。



技术支持

威联通提供贴心的在线支持及实时通客户服务，联络方式如下：

在线支持：<http://qnap.com/support>

论坛：<http://forum.qnap.com>

美国及加拿大地区技术支持

Email：<http://qnap.com/support>

电话：+1-909-595-2782 #3

地址：168 University Parkway, Pomona CA 91768

服务时间：06:00-18:00 (GMT- 08:00 Pacific Time, 星期一至星期五)

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Some devices are designed to deny users access to install or run modified versions of the software inside them, although the manufacturer can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

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The precise terms and conditions for copying, distribution and modification follow.

TERMS AND CONDITIONS

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1. Source Code.

The “source code” for a work means the preferred form of the work for making modifications to it. “Object code” means any non-source form of a work.

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